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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,698	06/27/2003	M. Benton Free	58399US002	7675

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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,698

Applicant(s)

FREE ET AL.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 17 and 25-28 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-16 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11-05-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Specification

The amendments in response to the Objection to the Abstract of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the objections.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-2,5-15, 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haubrich et al US 2003/0203101 in view of Lemelson US 5866195.

Haubrich et al teaches forming patterned structures on a substrate to form electrophoretic displays, circuits, etc. The process steps comprise printing on the substrate a strippable polymer-based maskant material which represents the desired pattern; depositing on the patterned substrate a conductive metal which is substrate adherent; and removing the strippable material with conductive material thereon by means including mechanical (physical stripping/ adhesive tape peeling, [0043]. It is the Examiner's position that this would have reasonably suggested other mechanical/ physical means well-known to remove coatings such as impact/ media blasting. The process leaves conductive material on surfaces where the strippable maskant was NOT present, and vice-versa [0029]. The strippable maskant polymer pattern is applied by printing methods such as screen printing, ink jet, gravure, etc [0018]. The method provides the benefit of a simpler, cleaner method than photolithography or etching to selectively form patterned surfaces. See also claims 1,3,4 on page 6. Applying a second, substrate adherent polymer rather than a metal to the patterned substrate surface is not taught. However, Lemelson

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teaches that conductive polymers may be used for circuitry and other electronic applications, and may be applied to substrates by dip or roller coating, etc [col. 21, 39-51], and further col. 22, 19-25 teaches the equivalence of such conductive polymers with metals and semiconductors, and the replacement of such conventional materials by the conductive polymers, because of the expectation of equivalent electrical conduction. Per claim 2, the strippable maskant polymer necessarily has a lower surface energy than the substrate adherent polymer to allow its removal while maintaining the conductive polymer on the substrate. Thus, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Haubrich et al by substituting the conductive polymers of Lemelson for the metals of the conductive layer of Haubrich et al because of the expectation of forming patterned conductive articles for electronic applications, wherein the conductive polymers substituted for the conductive metals would have reasonably provided equivalent performance.

As to claims 5-8, 18-22, the dimensions and height of the polymer would have been determined by the skilled artisan using routine experimentation for any desired end-use application.

2. Claims 3,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haubrich et al US 2003/0203101 in view of Lemelson US 5866195 and further in view of Laubacher et al US 5759625.

Haubrich et al and Lemelson are cited for the same reasons previously discussed, which are incorporated herein. A fluoropolymer-based maskant material is not cited.

Laubacher et al teaches on column 1, 43-50 that amorphous fluoropolymers have a "smooth, non-stick character" which resists adherence to other polymers, properties which would make the

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fluorocarbon polymer beneficial as the strippable polymer-based maskant of Haubrich et al.

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Haubrich et al in view of Lemelson by utilizing the fluorocarbon polymer materials of Laubacher et al as the strippable maskant because of the low adhesion properties of the fluoropolymer materials, which would make them readily strippable.

3. Claims 4,17,25-28 distinguish over the prior art which does not teach nor suggest to apply a continuous substrate-adherent polymer comprising a polyamide, and are accordingly allowed.

Response to Arguments

Applicants arguments and remarks have been fully considered. Applicants are to be commended for their clear, thorough, and detailed arguments, which the Examiner appreciates.

In its broadest form, Applicants' method for preparing a patterned article comprises

- applying a patterned release polymer
- applying a continuous layer of a substrate adherent **polymer** over the substrate and patterned release polymer in a substantially constant height relative to the substrate (i.e. uniform thickness)
- mechanically removing FROM THE PATTERNED RELEASE POLYMER the substrate-adherent polymer.

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Applicants arguments that the prior art does “not provide profilometer results” is not commensurate with scope of claims because neither claim 1, nor any of the non-allowed claims refer to such results and therefore the argument is not further considered. Haubrich does teach making well-defined patterned films on a substrate comprising

- applying a patterned strippable maskant on portions of the substrate where a subsequently applied film is not to be formed,
- applying a continuous film of a *conductive metallic material* on substrate and patterned strippable maskant in uniform thickness relative to the substrate surface (see fig. 3C, contrary to Applicants arguments on page 13, of Remarks),
- stripping away the strippable maskant by peeling (a mechanical means).

Thus Haubrich cites a *conductive metallic* material to form conductive patterns on a substrate rather than the polymer of Applicants’ claim (as previously acknowledged). However, the secondary reference by Lemelson teaches forming conductive circuitry patterns on a substrate specifically using conductive polymers, and further explicitly teaches on col. 22 to use such materials “in place of one or more of the metals and semi conducting films and layers to construct electrical circuits”. Thus, substitution of conductive polymers for metals and semiconductors is expressly taught, and it therefore would have been obvious to substitute the metals of Haubrich with the polymers of Lemelson, not because of a vague suggestion or rationale, but because of an express teaching of substituting one for another.

The issue of whether or not Lemelson supplies working examples, data, or whatever to allow evaluation is irrelevant to the fact the teaching is expressly revealed, and the Examiner is

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required to abide by the teachings of a valid patent. Clearly the polymers of Lemelson are sufficiently adherent to the substrate to withstand the rigors of use as circuitry so it is reasonable to expect they will have similar bonding/ adhesion as metals, certainly to withstand the non-rigorous forces of adhesive tape lifting when attached directly to a substrate! Hence Applicants arguments on pages 10-11 are not persuasive. Lemelson is not directed to the additional steps already clearly revealed by Haubrich so the reasons for including such arguments are unclear. Applicants further argue the embodiments of Haubrich utilizing a second repellant material. This is not cited in the Examiner's rejection per se, but Applicants are reminded that such extra steps are not prohibited by virtue of the open-ended transition wording of the claims. Hence this argument is not persuasive.

Applicants arguments regarding claims 3 & 16 , contrary to Applicants' assertions that Haubrich does not continuously coat the patterned strippable maskant, the reader need only look at figures 3 to see the method performs the same or equivalently to Applicants' claims. Applicants arguments regarding the additional embodiments are not persuasive, per above.

For all the above reasons, and for the reasons stated in the previous Office Actions the claim rejections set forth are maintained.

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

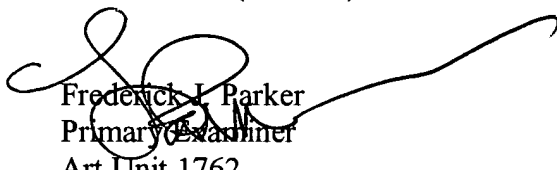
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp